Next Generation Air Monitoring (NGAM)

INTERAGENCY AIR AND SMOKE COUNCIL (IASC) MEETING

WEDNESDAY, MAY 3, 2017

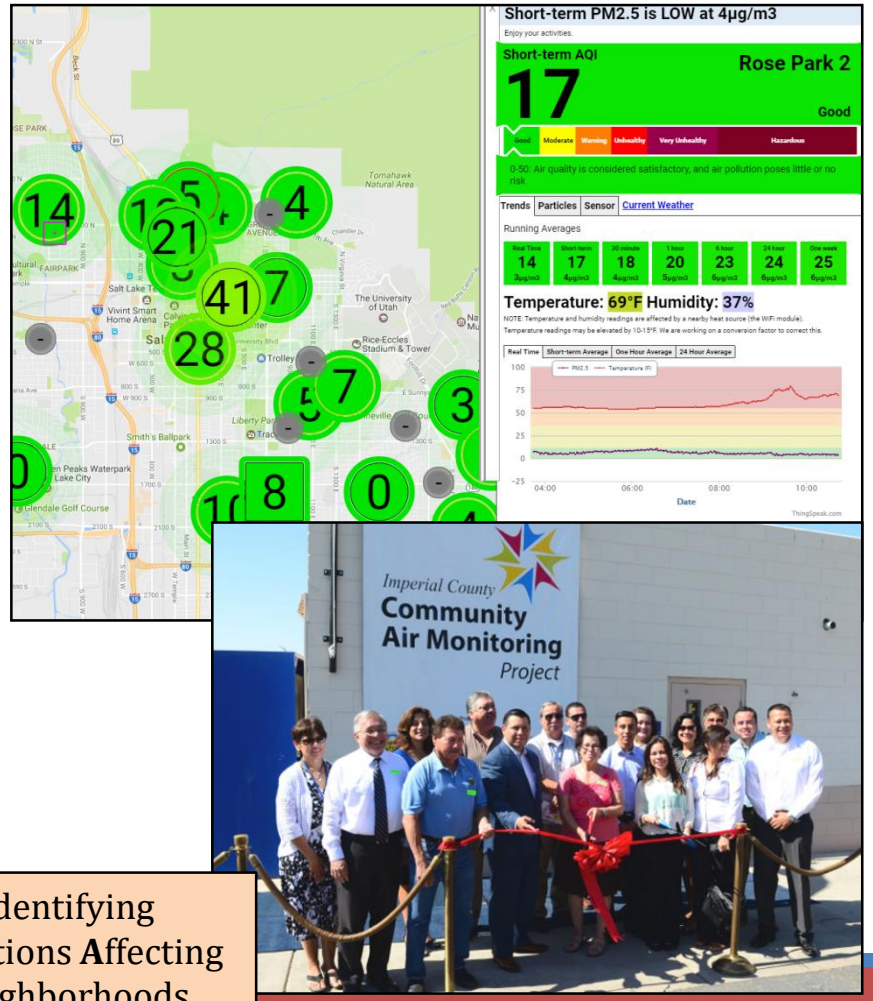
Next Generation Air Monitoring (NGAM) sensors

NGAM sensors

- Comparatively low cost
- Measure air quality real-time or near real-time
- Requires less field support than traditional monitoring methods

The low-cost/easy to use

- Empowered citizen scientists to create new monitoring networks
- Provides efficient tools for survey and investigation



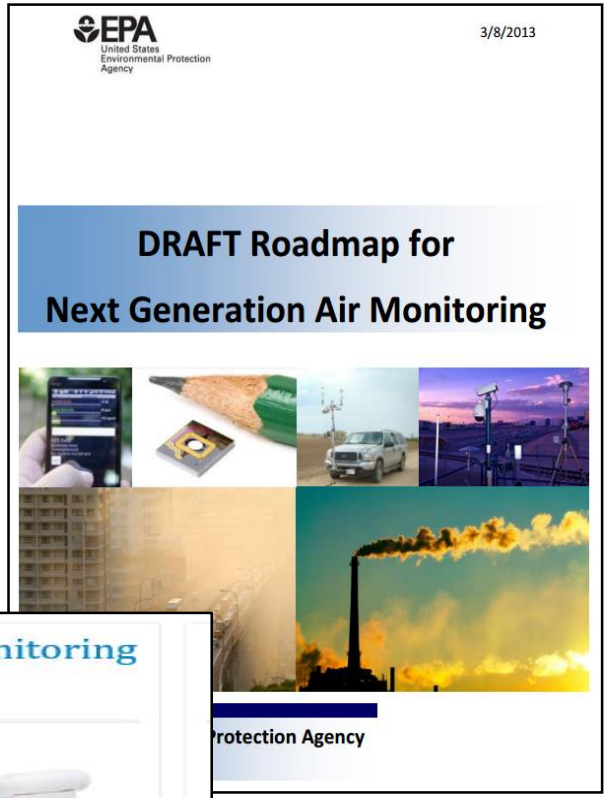
Identifying
Violations **A**ffecting
Neighborhoods

NGAM Strategic Plan

Nov 2016 - May 2017

Created a working group to report on:

- NGAM findings and gaps
- Impacts of sensors on air monitoring
- Implementation Strategies: How can we use in our programs?



Technical Considerations?

Sensor Hardware

- How should ARB be involved in with NGAM sensors?
- Development, evaluation, certification? If so, what level?

Data Quality

- What quality/quantity of data needed?
- Calibrations and standards?

Big Data/Data Science

- Managing large data sets?

  Can a relatively poor measurement in the correct place provide better information than a precise instrument in the wrong place?

Emerging Applications

- How can sensors inform our other technical programs?

Attainment, Exposure, Modeling, Fundamental Research

Programmatic Considerations?

Addressing Community Concerns

- Monitoring requests?
- How to empower communities in creating their own monitoring programs?

Support Environmental Justice

- Can we more effectively engage in process?
- Support by offering scientific and technical advisement?

Next Generation Enforcement

- Can sensors be used for enforcement, survey then bring in regulatory monitors?
- Cost effective=lots of NGAM coverage, spend expense focusing on violators?

Timely, Transparent Reporting

- Guiding interpretation of air quality data?
- Metrics used, modified AQI?

Key Recommendations

1. Establish a permanent team
   - Sensor technical resource
2. Create an online web portal
   - Receive/store/display community air monitoring data
   - Provide guidance on interpreting data
   - Develop flexible, simple language for air quality interpretation
3. Deploy pilot community air monitoring networks
   - Engage w/communities early/collaborate during the process
   - Develop quality assurance procedures for users
   - Document best practices
4. Support EJ community-operated air monitoring networks
   - Provide funding opportunities for communities to deploy their own networks
   - Host workshops on best management practices

Key Recommendations (cont)

5. Strengthen integration, collaboration, participation with NGAM community
   - Join USEPA's E-Enterprise for Environment Advanced Monitoring Team to coordinate projects
   - Help guide evolution of sensors
6. Improve ARB's response to emerging issues
   - Establish portable air monitoring sensor inventory
   - Develop decision support systems
   - Dedicate staff to support CARB's enforcement, risk assessment, and regulatory development activities
7. Enhance support for internal and external sensor evaluation
   - Conduct In-house sensor evaluations
   - Offer regulatory monitoring platforms for sensor comparability